REMARKS/ARGUMENTS

Claims 28 and 31 have been amended. Claims 29 and 30 have been cancelled.

§ 103 Rejections:

The Examiner rejected Claims 29-33, 36 and 37 as being unpatentable over US 7,186,541 (Gokarn et al) in view of US 4,970,334 (Argyropolous et al.) He also rejected the same Claims as being unpatenable over Gakarn et al in view of Bartoli et al. I believe the Examiner actually intended to reject Claims 28-33, 35 and 36. So in order to move forward with the prosecution of this application, I am making this response with the assumption that the Examiner did intend to make the rejections with respect to Claims 28-33, 35 and 36.

Applicants' respectfully urge that Claim 28 as amended overcomes the Examiners rejections of the Claims. None of the references individually or together teach nor suggest the Applicants' current invention, which exposes the solution comprising the β-hydroxycarboxylic acid (formed from a fermentation broth) to a heated surface comprising a dehydration catalyst in order to vaporize the solution and convert the β-hydroxycarboxylic acid to an α,β-unsaturated carboxylic acid.

The rejection over Gokarn et al. in view of Bartoli et al.

The Examiner indicated in the Office Action when referring to Bartoli et al. that:

> "The disclosure of cesium chloride in a suspension meets the limitation of a heated surface because cesium chloride, which is water soluble, is insoluble in an organic solvent, acetonitrile. Hence it would remain as a solid in the suspension that is heated by the thermal source."

However, while Bartoli et al. discloses that the suspension is refluxed, there is no indication regarding how the reflux is caused to occur and what type of heat source may be used. Further, even if the cesium chloride is passively heated, it would not be at a higher temperature relative to the solution (i.e., the cesium chloride would not heat the solution). This is very different from Applicants' current invention, where the heated surface comprising the catalyst

heats the solution and converts the β-hydroxycarboxylic acid to an α,β-unsaturated carboxylic acid. Finally, the cesium chloride in the Bartoli et al. system is not a catalyst, it is a reagent, as indicated in the abstract of Bartoli et al.

The rejection over Gokarn et al. in view of Argyropolous et al.

Applicants' believe that one of skill in the art when faced with how to dehydrate a β-hydroxycarboxylic acid would not look to Argyropolous et al., which does not teach or disclose such acids. Furthermore, even if Argyropolous et al. is combined with Gokarn et al, together they still do not teach or suggest Applicants' currently claimed invention. In Gokarn et al, the catalyst is added to the reactor with the reactants. There is no indication that it would be at a higher temperature than the solution. This is very different from Applicants' currently claimed invention where the heated surface comprising the dehydration catalyst heats the solution.

With regard to Applicants' currently amended Claim 31, none of the cited references teach or suggest that the catalyst is in the form of a bed.

Nonstatutory double patenting rejections:

Applicants' believe that it would be premature to address the provisional double patenting rejections set forth in the Office Action. However, once the Examiner has indicated that the Claims of the current case are allowable, Applicant will address the obviousness type double patenting rejections and file a terminal disclaimer, if appropriate.

In view of the above amendments and arguments, it is respectfully submitted that Claims 28, 31-33, 35 and 36 and the present application are in condition for allowance. The Applicants respectfully request reconsideration and allowance of Claims 28, 31-33, 35, and 36.

The Examiner is invited to telephone the undersigned if such would advance the prosecution of the Application.

Respectfully submitted,

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